

NAVAL STEERING AND DIVING CONTROL ACTUATION SYSTEM (SDCAS)



The Steering and Diving Control Actuation System (SDCAS) controls the four (4) main control surfaces, or fins, of an unmanned underwater vehicle (UUV). The system receives digital commands over a serial bus (multiple protocols are available) and power from either AC or DC bus power. SDCAS drives each fin to the master controllers commanded position independently. The system also outputs various system monitor parameters, warnings,

and faults. This includes motor temperatures, fin lock status, bus current and voltage, and communication status with each actuator.

KEY ACTUATOR FEATURES

- Customizable output torque, slew angle, and speed
- BLDC motor provides highly reliable, acoustic sensitive actuation
- Failsafe options are customizable for specific applications
- Output shaft lock solenoids available
- Pressure compensated housings available for application specific depth requirements
- Multiple position feedback options available, including redundant options

KEY CONTROLLER FEATURES

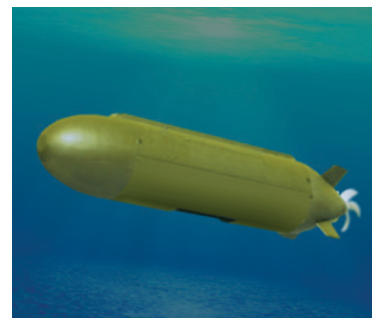
- Integrated power supply customizable for various input power
- Multiple fieldbus communication protocols available
- Position, velocity, or torque loop closure options
- Customizable switching frequencies and communication baud rate
- Customizable failsafe options for communications loss
- Multiple feedback device options available



Credit: U.S. Navy



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NAVAL STEERING AND DIVING CONTROL ACTUATION SYSTEM



ACTUATOR PERFORMANCE SUMMARY

Features	Specifications
Stroke	± 30°
Stall torque	>500 INLB
No load speed	>20 °/s
Loaded speed	>15 °/s @ 300 INLB
Rated power	0.012 hp
Peak motor current	0.7 A
Actuator weight	19 lbs
Max braking torque (wave slap)	1000 FTLB
Operating temperatures	28 °F – 85 °F
Pressure rating	>5000'

CONTROLLER PERFORMANCE SUMMARY

Features	Specifications
Supply voltage	8VDC to 300VDC
Communications interface	Multiple options
Position feedback	Resolver, encoder, HED
Controller weight	~33 lbs
Operating temperatures	28 °F to 85 °F
Pressure rating	>5000'

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